REMARKS

This amendment is being filed along with a Request for Continued Examination (RCE) in response to the final Office Action mailed January 25, 2008 and to the Advisory Action mailed May 20, 2008. Various claims are amended as shown. New claims 35-36 are being submitted herewith for consideration on their merits, along with claims 1-15, 17-22, and 28-34. No new matter has been added. Claims 16 and 23-27 were previously canceled without prejudice. With this amendment, claims 1-15, 17-22, and 28-36 are pending in the application.

I. Supplemental information disclosure statement (IDS)

A supplemental IDS, having references listed therein, is being filed herewith. Because this supplemental IDS is being filed along with the present RCE, an IDS certification and/or an IDS fee is not required and therefore is not being provided. It is kindly requested that an Examiner-initialed copy of this supplemental IDS be returned along with the next communication, so as to confirm that the references listed therein have been entered into the record and considered.

II. Discussion of the claims and cited references

The final Office Action rejected claims 1-12 and 16-22 under 35 U.S.C. § 103(a) as being unpatentable over Kenny (U.S. Patent Application Publication No. 2004/0036595) in view of Schuermann (EP 0689161) and further in view of Tuttle (U.S. Patent No. 5,613,228). Claims 13-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kenny in view of Schuermann and further in view of Tuttle and further view of Turner (EP 0899677). Claims 33 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kenny in view of Roesner (U.S. Patent No. 5,583,819). The Advisory Action maintained these rejections. These rejections are respectfully traversed for the reasons set forth below.

A. New dependent claim 35

New dependent claim 35 recites, *inter alia*, "a second length of a second time interval, in which the second power at the second frequency is subsequently sent, is longer than

the first length of the first time interval, in which the first power at the first frequency is sent." Support for these recitations can be found, for example, in the last sentence in paragraph [0026] of the present application, as published. It is respectfully submitted that these limitations are not met by the cited references, whether singly or in combination.

For example, page 4 of the final Office Action admitted that Kenny "is silent on teaching the power is transmitted for different time durations." Accordingly, it is clear that Kenny cannot and does not meet the limitations in claim 35 that require the second length to be "longer" than the first length.

Schuermann also does not meet the limitations in claim 35. For example, Figure 9 of Schuermann clearly shows three power pulses over time, with respective durations over time of 50 ms, 20 ms, and 10 ms. These time durations of Schuermann are shorter over time (rather than longer over time), such that each subsequent time duration (*e.g.*, 20 ms and 10 ms) of Schuermann is shorter than the previous time duration.

Accordingly, Schuermann does not meet the limitations of claim 35 that require the second length of the second time interval (in which the second power is subsequently sent) to be "longer" than the first length of the first time interval.

Hence, claim 35 is allowable.

B. Independent claim 1

Independent claim 1 recites, *inter alia*, "wherein the time interval t_f ends prematurely if none of said at least one tag responds." Page 4 of the final Office Action admitted that "Kenny and Schuermann are also silent on teaching ending an interval prematurely if none of the tag responds." To supply the missing teachings of Kenny and Schuermann, the final Office Action cited Tuttle. However, it is respectfully submitted that Tuttle does not cure the deficiencies of these references.

More particularly, the final Office Action has relied on Figure 1 and column 2, lines 28-54 of Tuttle. As clearly shown in the flowchart of Figure 1 of Tuttle, the Tuttle device "wait[s] for a response" at a block 4, and then increases power at a block 6 if there was no response. The issue to be considered herein is then "How long does Tuttle 'wait' for a response

before he increases his power?" Column 2, lines 28-54 of Tuttle provide the following discussion:

> "The signal is then transmitted using the current transmitter power setting 3. The first time this is done, the minimum power setting is used.
>
> After the signal is sent, the interrogator must wait for a brief period of time 4 for the RFID tag transceiver to respond with a signal of its own.
>
> ...
>
> If on the other hand, the RFID tag did not send a response or the interrogator did not receive the response, the interrogator will assume that the broadcast output power of the last transmitted signal was too weak. The interrogator will then increase the power level setting on its own transmitter 6, change the informational content of the signal to be sent reflecting the increase in power 2, and send another signal 3..."

From the above-quoted passages of Tuttle, it is abundantly clear that the Tuttle interrogator "must wait" for a brief period of time 4 for the RFID tag transceiver to respond. Tuttle's explicit allocation of a "brief period of time" in which the interrogator "must wait" strongly indicates that this waiting period of time is fixed and remains fixed—and consequently Tuttle teaches a waiting period that does not end prematurely. Indeed, there is nothing disclosed, taught, or suggested in Tuttle that this period of time to "wait" for a tag response is a variable amount of time, and the final Office Action has not identified any variability (*e.g.*, premature ending) of Tuttle's waiting period.

Moreover, it is noted that the Advisory Action did not address the "prematurely ends" limitation in claim 1 and how the teachings of Tuttle allegedly meet this limitation. It is therefore kindly requested that, if Tuttle continues to be used as a basis for rejection of claim 1 in the next communication, an explanation or other reasoning be provided by the Examiner as to how Tuttle's teaching of his interrogator "must wait for a brief period of time" meets the

limitation of claim 1 that requires "the time interval t_j ends prematurely if none of said at least one tag responds."

Accordingly, it is respectfully submitted that claim 1 is allowable.

C. Independent claims 12, 18-19, and 21

Independent claims 12, 18-19, and 21 recite, *inter alia* and using varying language, the "prematurely end[ing]" feature. By way of analogy with respect to the arguments presented above against Tuttle, it is respectfully submitted that claims 12, 18-19, and 21 are also allowable.

D. Independent claim 33

Independent claim 33 recites, *inter alia*, "reducing power P_j to a level $P_{j+1}, P_j > P_{j+1}$ for a rest of the first time interval t_j if a number of responded tags is more than some particular number." As an illustration, there may be a situation in which more tags respond to the power P_j than are capable of being processed by the base station. Therefore, the base station reduces the power being sent so that fewer tags are able to respond (*see, e.g.*, paragraph [0027] of the present application, as published), and thus the base station is then able to more suitably process the lesser number of responding tags.

Claim 33 is amended herein to recite, *inter alia*, reducing power "so as to reduce said number of responded tags that are in communication." Support for this amendment can be found, for example, in the last sentence of paragraph [0027] of the present application, as published.

It is respectfully submitted that Kenny, whether singly or in combination with the other cited references, does not meet the limitations of claim 33.

In maintaining the rejection of claim 33, the Advisory Action stated the following:

> "It is the examiner's position that the reference of Kenny teaches transmitting interrogation signals of different power level that is detectable

> in different zone and teaches the HF signal is detected in zone 1 and zone 2 (paragraph 039). The signal with the higher power level will cause the tags in zone 1 and zone 2 to respond. The higher power signal therefore has the potential of reaching more tags and generating more tag responses. Decreasing the power of the transmitted signal therefore will inherently lower the number of tags responding to the interrogation signal because the lower power signal has a smaller range compared to the higher power signal. It is therefore obvious to one of ordinary skill in the art to reduce the power."

The Advisory Action's allegation that it is "obvious to one of ordinary skill in the art to reduce the power" in Kenny is respectfully traversed herein.

While paragraph [0039] of Kenny does teach "If the E-tag is in zone 1, it will receive both [the LF and HF] signals and transmit a response signal indicating that both signals were received," it is respectfully submitted that Kenny does not disclose, teach, or suggest reducing the power so as to reduce the number of responded tags that are in communication. Instead of reducing the power in order to isolate the particular tags in zone 1, Kenny processes the returned signals in order to discriminate between tags in zone 1 and tags in zone 2.

More particularly, Kenny states the following in his paragraph [0039]:

> "If a response signal is received, then the base station decodes 308 the response signal to determine if the E-tag is in zone 1 or zone 2."

Thus from the above-quoted teaching of Kenny, it is abundantly clear that he determines the location (zone 1 or zone 2) of his tags by decoding the response signals sent by these tags. Thus, assuming *arguendo* that "the HF signal is detected in zone 1 and zone 2" as the Advisory Action has posited, Kenny clearly teaches that he discriminates between the tags (which receive the HF signal) in zone 1 and the tags (which also receive the HF signal) in zone 2

by decoding their response signals, rather than by "reducing power … so as to reduce said number of responded tags that are in communication" as recited in claim 1.

Accordingly, it is respectfully submitted that claim 1 is allowable over Kenny.

Claim 1 is allowable over the Kenny and the other references on record also for the following reasons discussed below.

In rejecting claim 33, page 9 of the final Office Action cited Kenny's paragraph [0021] and asserted that:

> "Kenny et al. teaches varying the range of the interrogation signal by varying the power of the interrogating signal (paragraph 021) and reducing the range automatically reduce the number of tags responding to the interrogation signal."

This assertion by the final Office Action that Kenny's paragraph [0021] meets the above-quoted limitations of claim 33 is traversed herein for a number of reasons.

First, while Kenny's paragraph [0021] states that "one of ordinary skill in the art can choose the range of zone 1 for a particular application by adjusting the power and frequency of the LF carrier signal," Kenny does not disclose, teach, or suggest the conditions recited in claim 33 for reducing power. That is, claim 33 reduces power if the condition of "if a number of responded tags is more than some particular number" is met, while in comparison Kenny discloses "adjusting the power" in order to "choose the range … for a particular application." Stated in another way, Kenny adjusts his power in order to match the desired range of his particular application, rather than changing power in response to the number of responded tags being "more than" some particular number.

Second, Kenny does not disclose reducing his power at all. Indeed, page 5 of the final Office Action admitted that Kenny "is not explicit on teaching the reducing the power Pj …" Indeed, it appears that Kenny uses a method that increases the range (such as by increasing power or frequency) of his carrier signal, rather than decreasing range by reducing power. For example, paragraphs [0035] – [0037] of Kenny describe sending a low frequency

(LF) carrier signal first, and then sending a high frequency (HF) carrier signal "[i]f the base station does not receive a response signal in response to a LF carrier signal," in order to reach tags that are outside of the range of the LF carrier signal. Thus, Kenny's change (increase) of range is based on whether a response signal is "not received", rather than a change (decrease) if "a number of responded tags is more than some particular number" as recited in claim 33.

Third, claim 33 was rejected on the combination of Kenny and Roesner. Kenny does not teach the limitations of claim 33 directed towards "reducing power," as explained above. Roesner does not cure the deficiencies of Kenny. For example, Roesner was merely cited by the final Office Action for allegedly disclosing "turning off the signal transmitted to the tag without causing the tag to loose[sic] power ...", and is silent as to the conditions recited in claim 33 pertaining to reducing power "if a number of responded tags is more than some particular number." In rejecting claim 33, the final Office Action has not cited any reference other than Roesner (which is deficient) to supply the missing teachings of Kenny.

In view of the arguments above, it is respectfully submitted that claim 33 is allowable.

E. Dependent claims 28-32 and 34

Dependent claims 28-32 and 34 recite that the first and second frequencies are "different frequencies in a same frequency band." In continuing to reject these claims, the final Office Action has again relied upon paragraph [0021] of Kenny that describes "adjusting the power and frequency of the carrier signal." Pages 2-3 of the final Office Action asserted the following:

> "Kenny et al. teaches varying the range of the LF carrier signal by adjusting the power and frequency of the LF carrier signal used to identify objects in a particular zone and teaches the range of the LF signal is greater than 30 kHz and less than 15 MHz (paragraph 021). Kenny therefore teaches the first and second frequencies are in the same

frequency band because only LF carrier signal is used to identify objects in zone 1."

It is respectfully submitted that the final Office Action has misinterpreted the teachings of Kenny in rejecting claims 28-32 and 34. In Kenny, the particular frequency of the LF carrier signal is fixed *a priori* depending on the application and remains fixed during the application. For example, paragraph [0021] of Kenny describes an application where the desired range of the LF carrier signal is about 3 feet, and paragraph [0026] of Kenny describes another (different) application where the desired range approximates the dimensions of a room. Kenny does not change the frequency of his LF carrier signal within a given application (*e.g.*, does not change the frequency of the LF carrier signal while trying to read tags within 3 feet).

Rather, it is respectfully submitted that Kenny's change of LF frequencies is only performed when he has to change his application ("choose the range of zone 1 for a particular application by adjusting the power and frequency of the LF carrier signal" as explained in his paragraph [0021]). In present claims 28-32 and 34 (which contain the recitations of their respective base claims), the different frequencies in the same frequency band are described in terms of being sent in time intervals—not in terms of different applications as in Kenny.

Accordingly, claims 28-32 and 34 are allowable.

F. Dependent claims 10-11

Dependent claim 10 recites, *inter alia*, "P_j is a monotonically increasing function of time." In rejecting claim 10, page 5 of the final Office Action admitted that "Kenny ... is not explicit on teaching ... the power is a function of time." To supply the missing teachings of Kenny, page 5 of the final Office Action asserted that Schuermann teaches "varying the duration of the power level of the interrogation signal (abstract)."

However, it is respectfully submitted herein that Schuermann still does not meet the specific limitations recited in claim 10. More particularly, Figure 9 and column 7, lines 18-25 of Schuermann shows and describes three power pulses: a "long range" interrogation signal, followed subsequently by a "medium range" interrogation signal, followed by a "short range"

interrogation signal." The long, medium, and short range interrogation signals of Schuermann are sent over time, and clearly decrease (rather than increase) in power level over time.

Accordingly, it is respectfully submitted that Schuermann does not meet the limitations of claim 10 that require "P_j is a monotonically increasing function of time." Hence, claim 10 is allowable.

Dependent claim 11 is allowable over Kenny and Schuermann, by virtue of its dependency upon claim 10. Furthermore, it is respectfully submitted that claim 11 is also allowable by virtue of the recitations contained therein.

More particularly, dependent claim 11 recites, *inter alia*, "P_j is increased when no further tags identify themselves." As previously explained above, Figure 9 and the accompanying description of Schuermann teach decreasing the power, rather than increasing the power as recited in claim 11.

G. New dependent claim 36

New dependent claim 36 recites, *inter alia*, "said powers P_j and P_{j+1} have increasing stairstep power levels and are of different time durations." Support for these recitations can be found, for example, in paragraphs [0024] and [0026] of the present application, as published. It is respectfully submitted that the limitations of claim 36 are not met by the cited references, whether singly or in combination.

For example, page 4 of the final Office Action admitted that Kenny "is silent on teaching the power is transmitted for different time durations." Accordingly, it is clear that Kenny cannot and does not meet the limitations in claim 36 that require the powers P_j and P_{j+1} to be of "different time durations."

Schuermann does not cure the deficiencies of Kenny. For example and as previously explained above, Schuermann's Figure 9 shows three power pulses of different time durations (*e.g.*, 50 ms, 20 ms, and 10 ms), but these three power pulses of Schuermann are decreasing, rather than increasing as recited in claim 36. Accordingly, Schuermann does not meet the limitations of claim 36 that require the power pulses to have "increasing stairstep power levels."

Hence, claim 36 is allowable.

III. Conclusion

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are believed to be allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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